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IS 1920 (1987): Hemp lines [TXD 9: Cordage]

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Indian Standard

SPECIFICATION FOR HEMP LINES

(Second Revision)

UDC 677·072·68 : 677·12

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

May 1987

Indian Standard

SPECIFICATION FOR HEMP LINES

(Second Revision)

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Indian Standard

SPECIFICATION FOR HEMP LINES

(*Second Revision*)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 8 January 1987, after the draft finalized by the Cordage Sectional Committee had been approved by the Textile Division Council.

0.2 This standard published in 1961 was first revised in 1973. The present revision of the standard has been made to make it up to date in the light of the experience gained since its first revision.

0.3 In the present revision mainly the rot proofing requirement and the sampling clause have been modified and 'pitch or maximum length of 10 lays' has been introduced. Opportunity has also been availed to modify certain other clauses for bringing this specification in line with other up-dated cordage specifications.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements of six varieties of hawser-laid hemp lines.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 3871-1984† shall apply.

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*Rules for rounding off numerical values (*revised*).

†Glossary of terms relating to fibre ropes and cordage (*first revision*).

3. ATMOSPHERIC CONDITIONS FOR CONDITIONING AND TESTING

3.1 The tests shall normally be carried out under prevailing atmospheric conditions. In all cases of dispute, however, tests shall be carried out on samples which have been conditioned for 24 hours in an atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature (*see* IS : 6359-1971*). Where practicable, tests shall be made in the standard conditioning atmosphere; otherwise, they shall be made as quickly as possible but not exceeding 15 minutes of removal of the test pieces from the conditioning atmosphere.

4. MANUFACTURE

4.1 Fibre — The fibre used in the manufacture of hemp lines shall be hemp fibre reasonably free from root ends, dust, dirt, dry pulp or any other foreign matter.

4.2 Yarn — The variety No. 1 shall be made from yarn weighing approximately 1 200 m/kg and Variety No. 2 to 6 shall be made from yarn weighing approximately 910 m/kg. The number of yarns per strand in the line shall be as shown in Table 1 and each strand shall contain equal number of yarns.

4.3 Strands — The strands of line shall be well formed, evenly twisted and shall be free from grooves and sunken yarns.

4.4 Lines — The lines shall be well and evenly laid and shall be reasonably free from defects. The finished strand shall have Z-lay. The lines shall be firm in lay and satisfactory in handle. The lines should not be too stiff in handle or too loose (that is lines in which the strands can be readily untwisted by hand).

4.5 Skeins — The skeins shall be continuous throughout its length and shall not contain splices or joints in the strands or in the line. The free ends of the skein shall be whipped to prevent unravelling.

5. REQUIREMENTS

5.1 The hawser-laid hemp lines shall comply with the requirements specified in Table 1.

5.2 Rot Proofing Treatment — If so ordered, ropes shall be rot proofed by the application of rot-proofing agent in appropriate

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*Method for conditioning of textiles.

TABLE 1 REQUIREMENTS OF HAWSER-LAID HEMP LINES

(*Clauses* 4.2 *and* 5.1)

VARIETY No.	DIAMETER	PITCH OR MAXIMUM LENGTH OF 10 LAYS	NO. OF YARNS PER STRAND	LINEAR DENSITY	BREAKING LOAD *Min*, ON 60 cm TEST LENGTH
(1)	(2)	(3)	(4)	(5)	(6)
	mm	cm		ktex	N*
1	2	6·6	2	5·7	345
2	3	9·9	2	6·8	440
3	4	13·2	3	12	685
4	5	16·5	5	18	1 275
5	6	19·8	7	27	1 570
6	7	23·1	9	39	2 255
Tolerance	+ 0·5 mm − 0	—	—	± 5 percent	—
Method of Test	IS : 7071 (Part 3)-1974†	IS : 7071 (Part 3)-1974†		IS : 7071 (Part 2)-1974‡	IS : 1670-1970§

*1 N = 0·102 kgf approximately

†Methods of physical test for ropes and cordages: Part 3 Diameter, circumference and lay.

‡Methods of physical test for ropes and cordages: Part 2 Mass, length and linear density.

§Method for determination of breaking load, elongation at break and tenacity of yarns (*first revision*).

quantity as agreed to between the buyer and the seller. In case zinc or copper naphthanate is used the zinc content shall be within 0·8 to 1·2 percent and copper content shall be within 0·4 to 0·8 percent respectively and the estimation of Zn and Cu shall be done in accordance with IS : 3522 (Part 1)-1966*.

5.3 Length of Skein — Unless otherwise stated, the lines shall be supplied in skeins of 37 m. The length of line in a skein shall be measured by the method prescribed in IS : 7071 (Part 2)-1974†.

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*Method for estimation of common preservatives used in textile industry.

†Methods of physical test for ropes and cordages: Part 2 Mass, length and linear density.

6. PACKING

6.1 Unless otherwise agreed to between the buyer and the seller the lines shall be packed conforming to the requirements laid down in IS : 3256-1980*.

7. MARKING

7.1 Each skein shall have a label securely attached to it on which the following information shall be legibly and indelibly marked:

a) Name of the material,

b) Manufacturer's name or trade-mark,

c) Length of the line in the skein in metres, and

d) Year of manufacture.

7.1.1 Any other marking required by the buyer may also be given.

7.1.2 Each skein may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

8. SAMPLING AND CRITERIA FOR CONFORMITY

8.1 The number of skeins of the same nominal diameter manufactured under similar conditions and delivered to a buyer against a despatch note shall constitute a lot.

8.2 The conformity of the lot shall be determined on the basis of the tests carried out on the samples selected from it.

8.3 Sample Size — Sampling shall be as representative as possible of the lot subjected to the measurement and tests. Draw the samples at random at the rate shown by the following formula:

$$S = 0{\cdot}4\sqrt{N}$$

where S is the number of sample skeins and N is the size of the lot

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*Code for inland packaging of ropes and cordages (*first revision*).

expressed as a number of 37 m skeins. When *S* as calculated is not a whole number, round off the value obtained to give a whole number in accordance with the requirements of IS : 2-1960*. In case where *S* is less than one, draw one sample coil.

8.4 Criteria for Conformity — The lot shall be declared as conforming to this standard if the conditions given below are satisfied:

a) The length of each skein is not less than the specified length, and

b) The average value of the test results in respect of other requirements conform to the requirements specified in the standard.

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*Rules for rounding off numerical values (*revised*).

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2